

Practice Tips: Weather or Not



USEFUL THINGS TO TRY: Practice with your teacher or at home with a parent.

1. Cloudy Concerns Learn basic cloud types and practice identifying clouds several times during the day. Two good information sources from the NOAA federal agency for elementary students are linked below. (See also our “Useful Websites” section.)
 - <https://scijinks.gov/clouds>
 - <https://www.noaa.gov/jetstream/clouds/ten-basic-clouds>

Can you create a cloud poster showing the elevations and appearance of 7-10 different cloud types using cotton balls and colored construction paper?

2. Watching the Weather Use an outdoor thermometer to record the temperature outside your house at the same time over a 2-week period. (If you have scales for both units, record the values in both °C and °F.) Your thermometer must be protected from direct sunlight. Put it on the north side of a post or wall.

Date	Morning Temp.		Afternoon Temp.	
	°C	°F	°C	°F

Graph the temperature versus time. (Plot the °C values and the °F values on separate graphs.) Do you see any patterns or trends? Is the pattern on the °C graph the same as the one on the °F graph? What do you see if you measure the temperature twice each day – just before school and just after you get home?

Air pressure is another useful value to study because it is related to the movements of air masses that can bring sunny weather or rainy conditions. Students can easily get barometric pressure values from an online source, or they can use directions in Practice Suggestion #6 below to make their own home-made barometer!

A Weather Journal can be a fun way to track patterns over several months. Encourage students to record temperature, air pressure, and daily precipitation once a week for several months – can they see the seasonal patterns and changes?



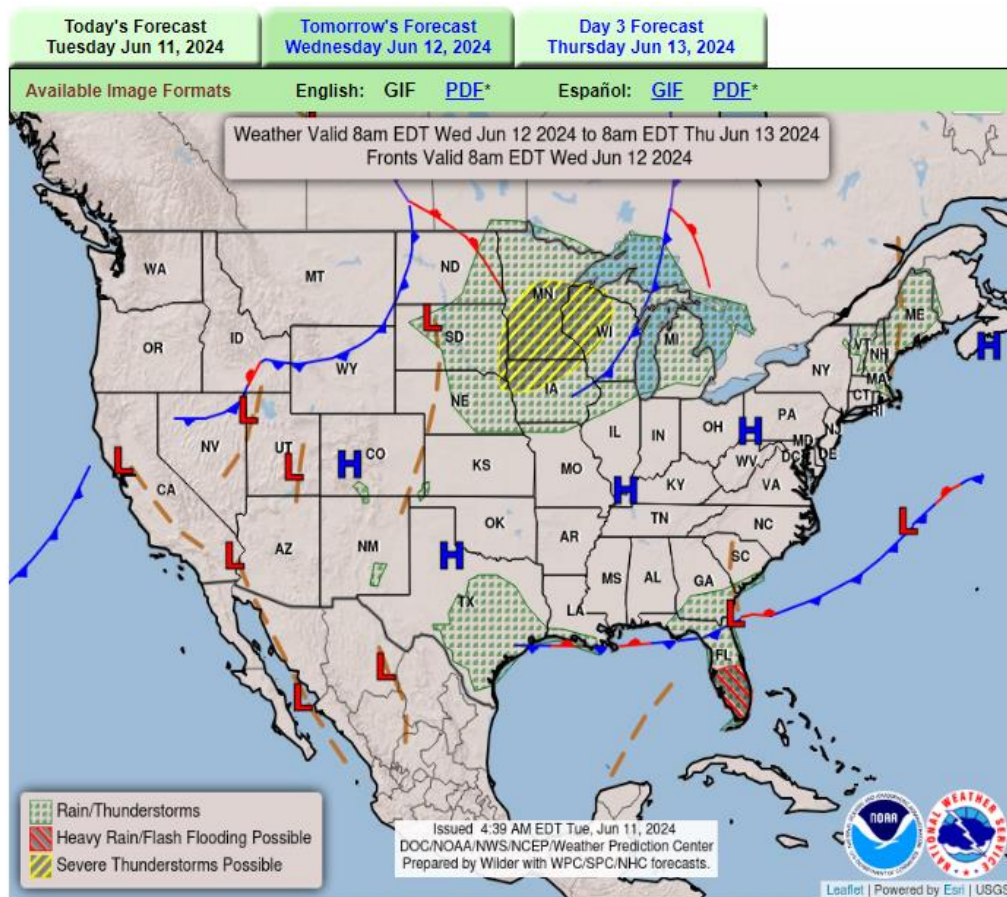
3. Weather Map Investigations NOAA's website (<https://www.wpc.ncep.noaa.gov/>) and The Weather Channel have excellent interactive weather maps. Can you locate a Regional Radar Map for Georgia? What weather feature do radar maps display?

You can see clouds on satellite maps. (Here is a good source from Colorado State University: <https://rammb-slider.cira.colostate.edu/> .) What direction do clouds tend to move across Georgia and the southeastern US?

4. Story Time Ask your relatives or older neighbors to tell you stories about severe weather events they have witnessed. Has anyone been in a flood? What about a twister? Investigate some of the major weather events and disasters that have been reported in the news. Write a story based on the best one you learned about.

5. Highs and Lows On TV, we usually see weather presented using symbols like those you see on the map below. (This one came from the NOAA site.) Can you identify what all the symbols mean? What are those curvy red and blue lines? Does the shading or color mean anything? What does an H imply for the weather in that area?

Weather symbols: https://ocean.weather.gov/product_description/keyterm.php



6. Get to Know your Weather Instruments People who study weather are known as meteorologists. They use a variety of instruments to measure things like air temperature and air pressure. The patterns in these measurements help them to predict what the weather will be like in a few days' time.

You can print out images and descriptions of different weather instruments to make a set of flash cards. (See activity at end of this Tip Sheet)

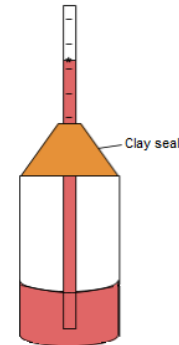
7. Make Your Own Weather Instruments Did you know that you can easily make simple versions of several weather tools using common household items? Follow the directions provided by the North Carolina Climate Office at NCSU (<https://climate.ncsu.edu/learn/>) to make things like thermometers, barometers, and anemometers. There is even a sling psychrometer for measuring relative humidity!

- [Homemade Weather Instruments - Instructor](#)
- [Homemade Weather Instruments - Student](#)

Practice taking weather measurements over several days as in the activity above.



Building a Thermometer



USEFUL WORDS TO KNOW:

Here are some representative words you should know.

anemometer	wind speed	climate	cumulonimbus	fog
hygrometer	humidity	cold front	cirrus cloud	sleet
thermometer	temperature	warm front	stratus cloud	tornado
barometer	air pressure	meteorology	cumulus cloud	monsoon

USEFUL WEBSITES TO SEE:

We verified these in January of 2025.

Weather maps and general information:

<http://www.weather.com> (Weather Channel. See menu for Interactive Radar Maps.)

<https://www.weather.gov/forecastmaps/> (Weather forecast maps.)

<http://www.weatherwizkids.com> (Great general weather site for kids.)

Make your own weather station instruments:

<https://climate.ncsu.edu/learn/wp-content/uploads/sites/3/2021/01/Homemade-Instruments-INSTRUCTOR.pdf> (Document referred to in activity above)

https://www.wqow.com/weather/make-your-own-weather-instruments/article_4147145f-b357-542e-b671-ce73ba528193.html (Animated video instructions)

Cloud information:

<http://www.weatherwizkids.com/weather-clouds.htm>

https://www.weather.gov/lmk/cloud_classification

ADDITIONAL FERNBANK RESOURCES:

Fernbank Science Center has two resource items that DeKalb Elementary Science Olympiad (ESO) participants can examine and use for practice:

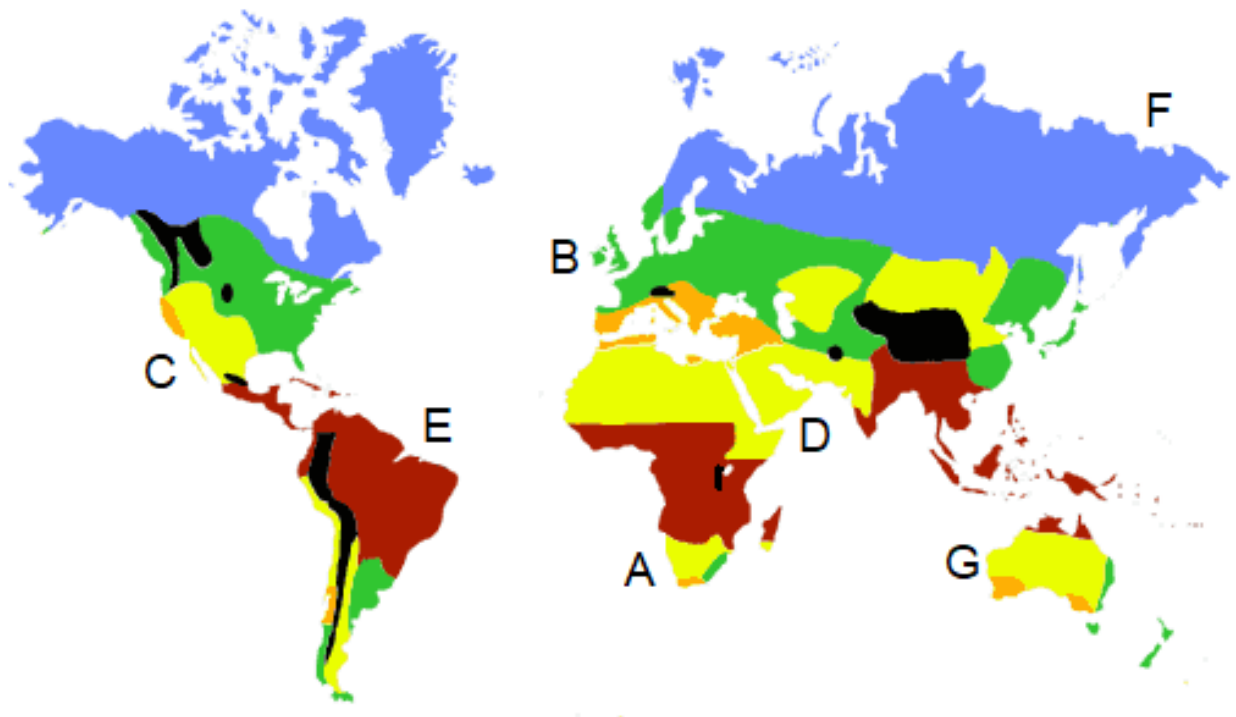
- **The Weather Kit** This wooden box contains a set of weather instruments for student examination and practice: thermometer, anemometer, aneroid barometer, etc. The instruments are identical or very similar to items they may be asked to use at the DeKalb ESO.
- **The Weather Cyler Forecasting Aid** This hand-held card allows students to observe connections between high and low-pressure centers and various fronts. As they pull the inner card slowly out of its sheath, students observe how clouds, air temperature and pressure, and rain correspond to a movements of the fronts on a corresponding weather map. An identical tool is often used at the DeKalb ESO in the Weather or Not event.

Use or loan of either tool requires pre-arrangement by email with Michael Dowling at Fernbank Science Center. Use is restricted to participants in the DeKalb ESO, generally during our spring semester practice season. Parents may bring students to our facility during public hours and use the kit here or arrange to check them out for use at home or school for a week or so. DCSD courier services are not available for delivery or return of these items, so parents or teachers must commit to a return trip for drop-off to Fernbank Science Center, 156 Heaton Park Dr NE, Atlanta, GA 30307.

RULE CLARIFICATIONS: These apply only to the DeKalb Elementary Science Olympiad, DESO.

1. Students may be asked to make measurements using actual weather instruments.

Geographic Climate Patterns



1. On the map above, what **color** corresponds to each of the following climate zones?

Arid _____ Highland / Mountain _____ Polar _____
Temperate _____ Tropical _____

2. If it is **summer** at location **A**, what is the season at **B**?

3. Which letter is closest to the location of the **Amazon**?

4. What are the names of 4 different countries around **D**? What is their climate like?

5. What do we call the part of Russia up by letter **F**? Is this a warm or cold place?

6. Which letter is closest to the **equator**?

7. If Antarctica were shown, what color would it likely have on this map?

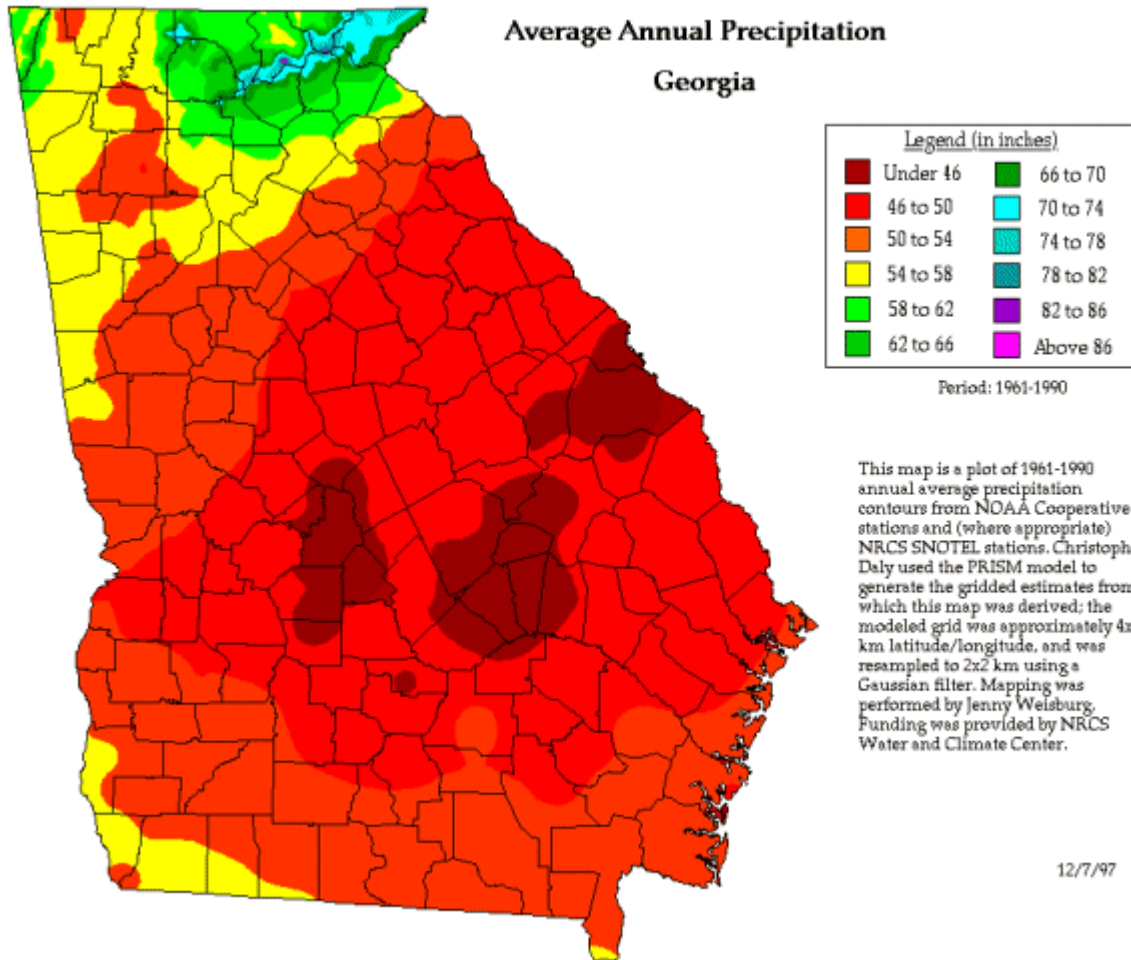
8. Which color usually has the largest amount of **precipitation**, either rain or snow?

GEORGIA RAINFALL & PRECIPITATION



NATIONAL WEATHER SERVICE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Agriculture is an important part of Georgia's economy, and farmers need to know how much rainfall to expect each year. This map shows you the average total precipitation for one year (based on data from 1961 to 1990). The map was produced by National Weather Service, a unit of a federal agency called the National Oceanic and Atmospheric Administration (NOAA).

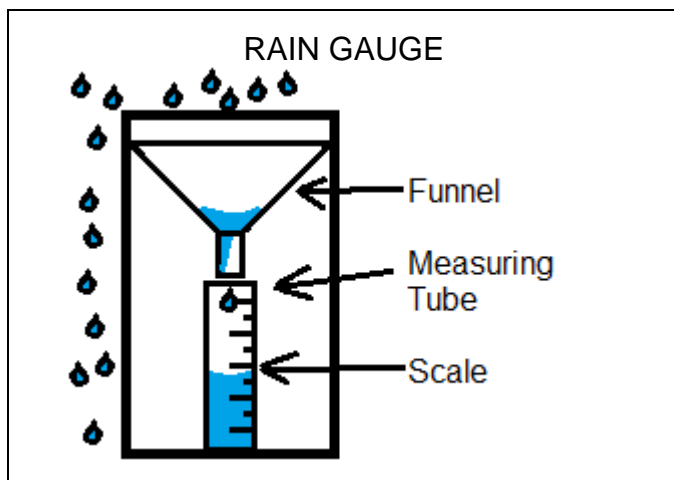
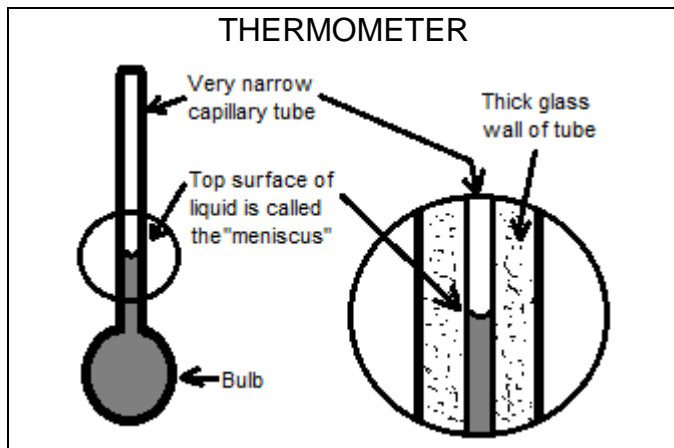
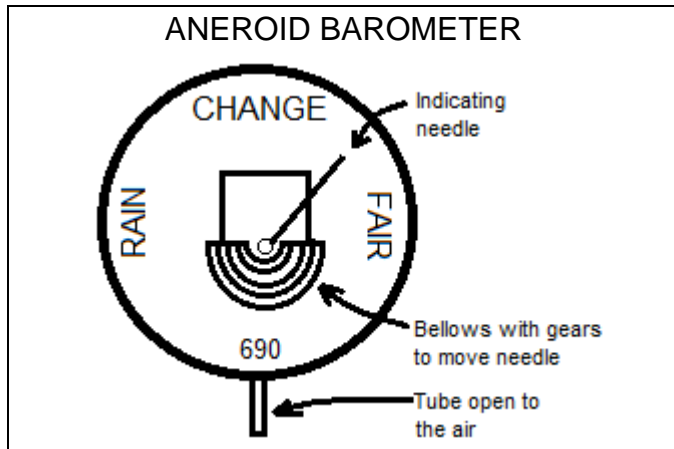


1. In general, does north Georgia get **more** or **less** annual precipitation than central Georgia?
2. DeKalb County is in north central Georgia. It is split almost exactly in half by two different colors on this map. What are the colors and how much average rainfall does each half receive in one year?
3. What is the all-time **record rainfall for a single day** for any location in Georgia?
4. You can find a more current map here: [Precipitation Map for 1991-2020](https://www.weather.gov/ffc/clisumlist) Has the size of the driest region of our state changed at all over time?

Weather Instrument Flash Cards

Cut out each rectangle. Match up each **front side** with the correct **back side**. Tape or glue the matching pairs to opposite sides of an index card to make a set of flash cards for practice. Can you find answers to fill in all the blanks?

FRONT SIDES



BACK SIDES

(Not yet matched with items on the left – that is your job!)

DEVICE: _____

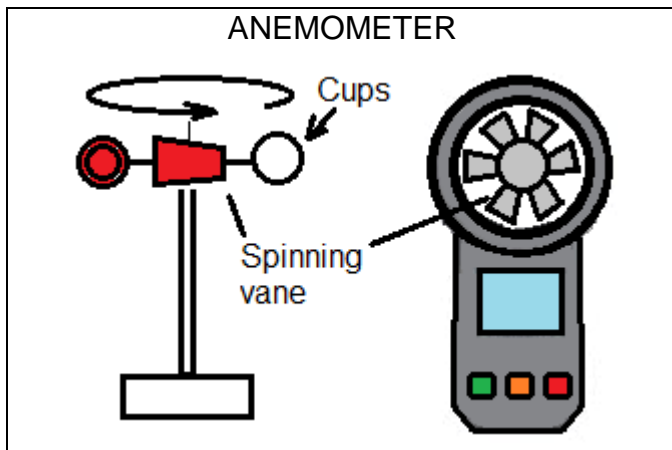
This instrument measures the temperature of the air. The metric unit is degrees _____, and the English unit is degrees _____. Water freezes at _____ ° C and _____ ° F.

DEVICE: _____

This instrument measures the amount of liquid precipitation. The metric unit is the height of the liquid column in _____, and the English unit is _____. The yearly average value for DeKalb County is around _____.

DEVICE: ANEMOMETER

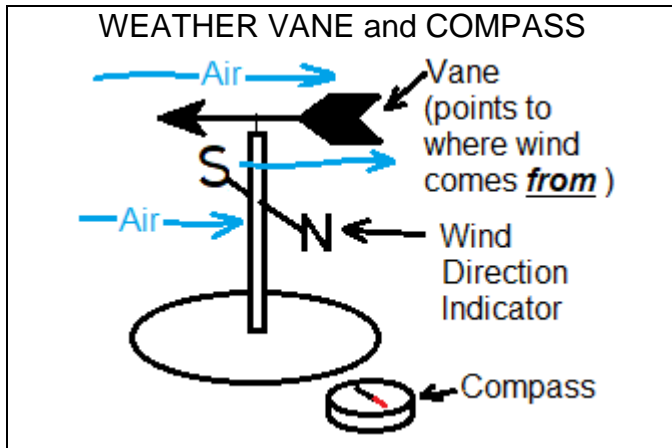
This instrument measures _____ . The metric and English units are _____ and _____. For twisting weather storms known as **t** _____ **s**, we use the _____ scale to describe the how severe the danger is.



DEVICE: _____

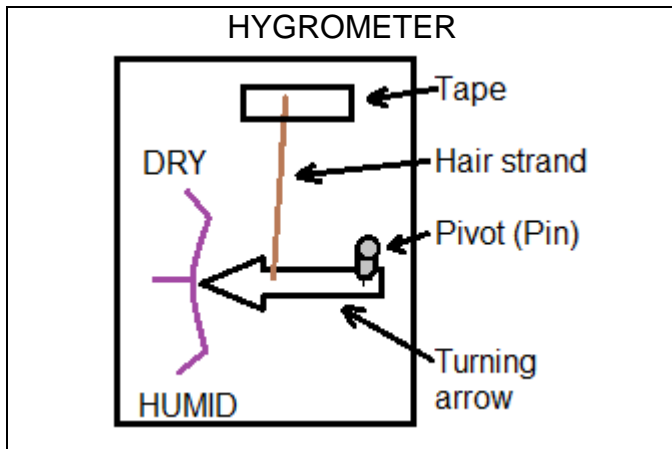
An Aneroid _____ measures the **a** ____ **p** ____ .

On our picture, the “690” is probably in units of _____, and this value is a **LOW / HIGH** value (circle one), so the weather is likely **rainy / changing / fair**.



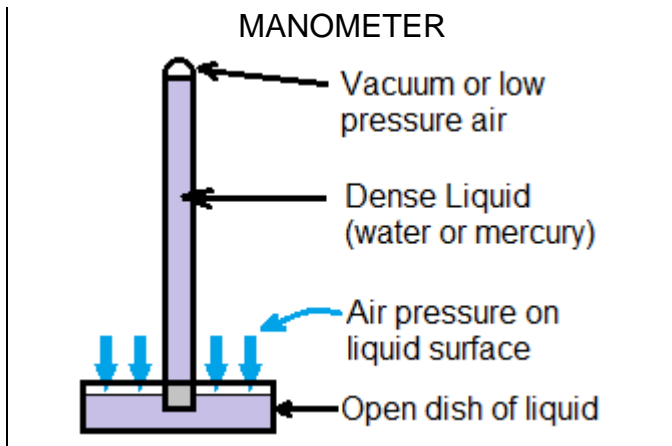
DEVICE: _____

This is an old-fashioned way of measuring the air pressure. It was invented by an Italian scientist named **T** _____ .), When the pressure is **higher**, the height of the liquid column gets **taller / shorter** .



DEVICE: _____

This instrument shows you which way the wind is blowing. The first step is to use a **c** _____ to make sure its Wind Direction Indicator is pointing the right way! In our picture, the arrow shows a **North / East / West** wind.



DEVICE: _____

This thing tells you the **humidity**. In our pictured version, a long human hair shrinks on a dry day and pulls the arrow up. On a **rainy day**, the relative humidity approaches ____%. A comfortable range is ____ to ____%.